Tamkang University Academic Year 114, 1st Semester Course Syllabus

Course Title	STATISTICS	Instructor	HUANG, YEN-CHUN
Course Class	TKFXB2A DEPARTMENT OF ARTIFICIAL INTELLIGENCE, 2A	Details	◆ General Course ◆ Required ◆ One Semester ◆ 2 Credits
Relevance to SDGs	SDG2 Zero hunger SDG4 Quality education SDG5 Gender equality SDG6 Clean water and sanitation		

Departmental Aim of Education

Ⅰ. Students may analyze problems in applied science based on the fundamental knowledge of programming, mathematics, and artificial intelligence.

Ⅱ. Students may plan and implement an AI system following the procedures of problem analysis, experiment testing, data visualizing, derivation and deduction.

Ⅲ. Educate the students to be AI engineers who may accomplish their missions indepedently and may collaborate with their colleagues in the workplace.

Ⅳ. Students may have basic skills and global competence for career diversification, and may keep lifelong learning.

Subject Departmental core competences

A. Professional analysis.(ratio:40.00)

B. Practical application.(ratio:30.00)

C. Professional attitude.(ratio:25.00)

D. Global Mobility.(ratio:5.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:10.00)

2. Information literacy. (ratio:20.00)

3. A vision for the future. (ratio:10.00)

4. Moral integrity. (ratio:5.00)

5. Independent thinking. (ratio:30.00)

6. A cheerful attitude and healthy lifestyle. (ratio:10.00)

7. A spirit of teamwork and dedication. (ratio:10.00)

8. A sense of aesthetic appreciation. (ratio:5.00)

Course Introduction	1. Establishing fundamental statistical concepts: Students will be able to think and solve practical problems using mathematical and statistical concepts. 2. Cultivating data processing and analysis skills: Through software operations, students will be able to execute data processing, statistical analysis, and data visualization. Through project reports, they will become proficient in statistical analysis skills using real-life examples.

The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.
II.Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.
III.Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	Creating a strong foundation in statistical concepts while fostering skills in data processing and analysis	Cognitive

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCD	12345678	Discussion, Experience	Testing, Discussion(including classroom and online), Report(including oral and written)

Course Schedule

Week	Date	Course Contents	Note
1	114/09/15 ~ 114/09/21	Introduction to Statistics	
2	114/09/22 ~ 114/09/28	Introduction to Descriptive Statistics	
3	114/09/29 ~ 114/10/05	Sampling techniques	
4	114/10/06 ~ 114/10/12	Data Presentation and Visualization (一)	

5	114/10/13 ~ 114/10/19	Discrete Probability Distribution (一)	
6	114/10/20 ~ 114/10/26	Discrete Probability Distribution (二)	
7	114/10/27 ~ 114/11/02	Basic concepts of probability	
8	114/11/03 ~ 114/11/09	Estimation and confidence intervals	
9	114/11/10 ~ 114/11/16	Midterm Exam/Midterm Assessment Week (teachers can adjust the week as needed)	
10	114/11/17 ~ 114/11/23	Sampling Distribution	
11	114/11/24 ~ 114/11/30	Introduction to statistical software (e.g., R, Excel	
12	114/12/01 ~ 114/12/07	Data Analysis with Software	
13	114/12/08 ~ 114/12/14	One-way ANOVA and Data Analysis with Software	
14	114/12/15 ~ 114/12/21	Chi-square test and Data Analysis with Software	
15	114/12/22 ~ 114/12/28	Real-world examples and case studies	
16	114/12/29 ~ 115/01/04	Final Week of Diverse Assessments	
17	115/01/05 ~ 115/01/11	Final Week of Diverse Assessments/Flexible Teaching Week for Teachers	
18	115/01/12 ~ 115/01/18	Flexible Teaching Week for Teachers	

Key capabilities	self-directed learning Social Participation Problem solving
Interdisciplinary	In addition to teaching content of the teacher's professional field, integrate other subjects or invite experts and scholars in other fields to share knowledge or teaching
Distinctive teaching	Translation Teaching Course Collaborative teaching (multiple teachers and business teachers in the school) course Learning technologies (such as AR/VR,etc.) incorporated to physical courses
Course Content	Gender Equality Education Logical Thinking AI application
Requirement	

Textbooks and Teaching Materials	Self-made teaching materials:Textbooks, Presentations, Worksheets Using teaching materials from other writers:Textbooks, Presentations, Worksheets
References	
Grading Policy	◆ Attendance： 15.0 % ◆ Mark of Usual：15.0 % ◆ Midterm Exam： 25.0 % ◆ Final Exam： 35.0 % ◆ Other〈助教〉：10.0 %
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at https://web2.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php. ※"Adhere to the concept of intellectual property rights" and "Do not illegally photocopy, download, or distribute." Using original textbooks is advised. It is a crime to improperly photocopy others' publications.